More amputations and open fractures: Pediatric utility task vehicle (UTV) injuries are more severe than all-terrain vehicle (ATV) injuries

Jack A. Nolte, Derek Krinock, Bliss Jaggers, Ngoc Le, Deidre Wyrick, Scott J Schoenleber

INTRODUCTION: Utility task vehicles (UTVs or Side-by-sides) differ from all-terrain vehicles (ATVs or 4-Wheelers) in that they are heavier, have larger engines, and have rollover protective structures. Despite their growing popularity for recreational use, there is emerging evidence that mutilating injuries may be higher in UTVs than ATVs, but this has not been evaluated in a pediatric-only population. This study seeks to determine differences in injury characteristics between vehicle types.

METHODS: A retrospective cohort study was performed at a level 1 pediatric trauma center, evaluating all patients <18 years old who presented following an ATV or UTV accident between 2018 and 2023. Demographic, injury and outcomes data was collected. Statistical analysis was performed with a combination of the Student's t-test for continuous data and the Fisher exact or Chi-squared tests for categorical data.

RESULTS: 743 patients were identified (ATV 533, UTV 210), with a mean age of 11.8±3.7y, with ATV patients being older (12.1±3.6y) than UTV patients (11.2±4.0y, p=0.003). Overall rates of admission (ATV 54% vs UTV 60%; p=0.12), surgical treatment (ATV 42% vs UTV 43%; p=0.87) and readmission (ATV 6% vs UTV 5%; p=0.86) were similar between groups. UTV injuries resulted in significantly more open extremity fractures (ATV 6.6% vs UTV 11%; p=0.045), more type IIIa/b/c open fractures (ATV=1.7%, UTV=6.2%; p=0.001) and more amputations (ATV 0.4% vs UTV 3.3%; p=0.0009). Amputation level was trans-humeral or through-elbow in 3 patients (all UTV), transtibial in 1 patient (UTV), multiple fingers in 1 patient (UTV), and single partial finger in 4 patients (2 UTV, 2 ATV).

DISCUSSION AND CONCLUSION: UTV injuries have a higher rate of amputation, open fracture, and severe open fracture compared to ATV injuries. Significant amputations (major limb or multiple fingers) were observed only in the UTV group. Surgeons and the general public should be aware that UTVs have the potential for more severe trauma to the limb, potentially resulting in loss of limb function.